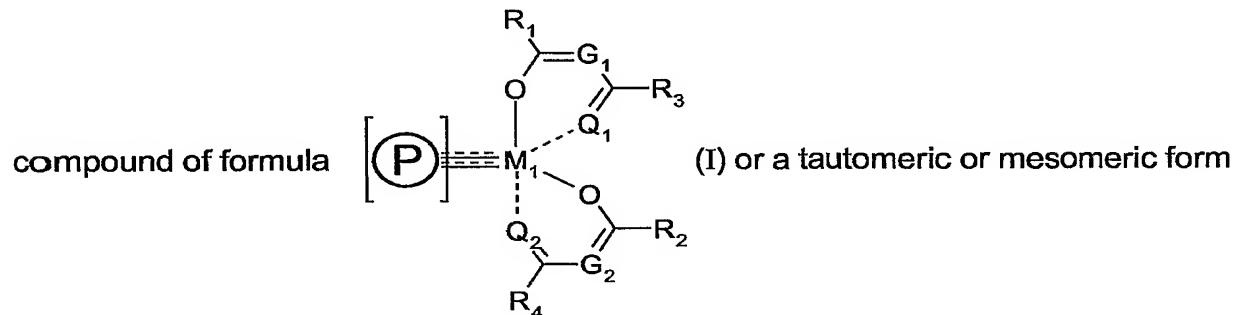


What is claimed is:

1. An optical recording medium comprising a substrate, a recording layer and optionally one or more reflecting layers, wherein the recording layer comprises a



5 thereof, wherein

G_1 and G_2 are each independently of the other $\text{C}(\text{R}_5)$ or N ;

M_1 is a lanthanide or transition metal of groups 4 to 10;

P is a phthalocyanino diradical;

Q_1 and Q_2 are each independently of the other O or S ,

10 R_1 and R_2 are each independently of the other $\text{C}_1\text{-C}_{12}\text{alkyl}$, $\text{C}_3\text{-C}_{12}\text{cycloalkyl}$, $\text{C}_2\text{-C}_{12}\text{alkenyl}$ or $\text{C}_3\text{-C}_{12}\text{cycloalkenyl}$ each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_6 , or $\text{C}_6\text{-C}_{10}\text{aryl}$, $\text{C}_1\text{-C}_9\text{heteroaryl}$, $\text{C}_7\text{-C}_{12}\text{aralkyl}$ or $\text{C}_2\text{-C}_{12}\text{heteroaralkyl}$ each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_7 ;

15 R_3 and R_4 are each independently of the other hydrogen, hydroxy, S-R_8 , O-R_8 , O-CO-R_8 , OCOOR_8 , NH_2 , NH-R_8 , NR_8R_9 , NHCOR_8 , $\text{NR}_8\text{COR}_{10}$, NHCOOR_8 , $\text{NR}_8\text{COOR}_{10}$, ureido, $\text{NR}_8\text{-CO-NHR}_{10}$, or $\text{C}_1\text{-C}_{12}\text{alkyl}$, $\text{C}_3\text{-C}_{12}\text{cycloalkyl}$, $\text{C}_2\text{-C}_{12}\text{alkenyl}$ or $\text{C}_3\text{-C}_{12}\text{cycloalkenyl}$ each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_6 , or $\text{C}_6\text{-C}_{10}\text{aryl}$, $\text{C}_1\text{-C}_9\text{heteroaryl}$,

C₇-C₁₂aralkyl or C₂-C₁₂heteroaralkyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₇;

each R₅, independently of any other R₅, is hydrogen, or C₁-C₁₂alkyl, C₃-C₁₂cycloalkyl, C₂-C₁₂alkenyl or C₃-C₁₂cycloalkenyl each unsubstituted or substituted by one or

5 more, where applicable identical or different, radicals R₆, or C₆-C₁₀aryl,

C₁-C₉heteroaryl, C₇-C₁₂aralkyl or C₂-C₁₂heteroaralkyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₇;

wherein R₁ and R₂, R₂ and R₃, R₃ and R₄ or R₁ and R₄ can be linked by a bonding member, or two of R₁, R₂, R₃ and R₄ can each be linked by a bonding member to

10 one of the two other R₁, R₂, R₃ and R₄ to form pairs, and each bonding member is a direct bond or a bridge O, S or N(R₈); or

R₁ forms with R₅ of G₁ and/or R₃ forms with R₅ of G₂ a saturated, mono- or poly-unsaturated or aromatic 5- or 6-membered ring which may optionally contain 1, 2 or 3 identical or different hetero atoms -O-, -S-, -N= or -N(R₈)-, which ring is unsubstituted or substituted by one or more, where applicable identical or different, radicals R₇; and/or

R₂ forms with R₅ of G₁ and/or R₄ forms with R₅ of G₂ a saturated or mono- or poly-unsaturated 5- or 6-membered ring which may optionally contain 1, 2 or 3 identical or different hetero atoms -O-, -S-, -N= or -N(R₈)-, which ring is unsubstituted or

20 substituted by one or more, where applicable identical or different, radicals R₆;

R₆ is halogen, hydroxy, O-R₁₁, O-CO-R₁₁, oxo, S-R₁₁, thioxo, NH₂, NH-R₁₁, NR₁₁R₁₂, NH₃⁺, NH₂R₁₁⁺, NHR₁₁R₁₂⁺, NR₁₁R₁₂R₁₃⁺, NR₁₁-CO-R₁₃, NR₁₁COOR₁₃, cyano, formyl, COO-R₁₁, carboxy, carbamoyl, CONH-R₁₁, CONR₁₁R₁₂, ureido, NH-CO-NHR₁₃, NR₁₁-CO-NHR₁₃, phosphato, P(=O)R₁₁R₁₃, POR₁₁OR₁₃, OPR₁₁R₁₃, OPR₁₁OR₁₃,

25 P(=O)R₁₁OR₁₃, P(=O)OR₁₁OR₁₃, OP(=O)R₁₁OR₁₃, OP(=O)OR₁₁OR₁₃, OPO₃R₁₁, SO₂R₁₁, sulfato, sulfo, R₁₄, N=N-R₁₄, or C₁-C₈alkoxy or C₃-C₈cycloalkoxy each unsubstituted or mono- or poly-substituted by halogen;

R_7 , independently of any other R_7 , is R_{15} , halogen, nitro, cyano, thiocyno, hydroxy, $S-R_8$, $O-R_8$, $O-CO-R_8$, $OCOOR_8$, NH_2 , $NH-R_8$, NR_8R_9 , $NHCOR_8$, NR_8COR_{10} , $NHCOOR_8$, NR_8COOR_{10} , ureido, $NR_8-CO-NHR_{10}$, NH_3^+ , $NH_2R_8^+$, $NHR_8R_9^+$,

$NR_8R_9R_{10}^+$, $N=N-R_{15}$, $N=CR_8R_9$, $N=CR_{16}R_{17}$, $C(R_{18})=NR_8$, $C(R_{18})=NR_{16}$,

5 $C(R_{18})=CR_{16}R_{17}$, CHO, $CHOR_8OR_{10}$, COR_9 , $CR_9OR_8OR_{10}$, $CONH_2$, $CONHR_8$, $CONR_8R_9$, SO_2R_8 , SO_3R_8 , SO_2NH_2 , SO_2NHR_8 , $SO_2NR_8R_9$, COOH, $COOR_8$, $B(OH)_2$, $B(OH)(OR_8)$, $B(OR_8)OR_{10}$, phosphato, $P(=O)R_8R_{10}$, POR_8OR_{10} , $P(=O)R_8OR_{10}$, $P(=O)OR_8OR_{10}$, OPR_8R_{10} , OPR_8OR_{10} , $OP(=O)R_8OR_{10}$, $OP(=O)OR_8OR_{10}$, OPO_3R_8 , sulfato, sulfo, or C_1-C_5 alkyl, C_3-C_6 cycloalkyl, C_1-C_5 alkylthio, C_3-C_6 cycloalkylthio,

10 C_1-C_5 alkoxy or C_3-C_6 cycloalkoxy each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_6 ;

R_8 , R_9 and R_{10} are each independently of the others R_{15} , $R_{19-[O-C_1-C_4alkylene]}_m$,

$R_{19-[NH-C_1-C_4alkylene]}_m$, or C_1-C_8 alkyl, C_3-C_8 cycloalkyl, C_2-C_8 alkenyl or

C_3-C_8 cycloalkenyl each unsubstituted or substituted by one or more, where

15 applicable identical or different, halogen, hydroxy, C_1-C_5 alkoxy or C_3-C_6 cycloalkoxy radicals; or

R_8 and R_9 together with the common nitrogen are pyrrolidine, piperidine, piperazine or morpholine, each of which is unsubstituted or mono- to tetra-substituted by C_1-C_4 alkyl; or

20 R_8 and R_{10} together are C_2-C_8 alkylene, C_3-C_8 cycloalkylene, C_2-C_8 alkenylene or C_3-C_8 cycloalkenylene, each of which is unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy, C_1-C_5 alkoxy or C_3-C_6 cycloalkoxy radicals;

R_{11} , R_{12} and R_{13} are each independently of the others C_1-C_8 alkyl, C_3-C_8 cycloalkyl,

25 C_2-C_8 alkenyl, C_3-C_8 cycloalkenyl, $R_{19-[O-C_1-C_4alkylene]}_m$, $R_{19-[NH-C_1-C_4alkylene]}_m$, C_6-C_{10} aryl, C_4-C_9 heteroaryl, C_7-C_{10} aralkyl or C_5-C_9 heteroaralkyl; or

R_{11} and R_{12} together with the common nitrogen are pyrrolidine, piperidine, piperazine or morpholine, each of which is unsubstituted or mono- to tetra-substituted by C_1 - C_4 alkyl;

R_{14} is C_6 - C_{12} aryl, C_4 - C_{12} heteroaryl, C_7 - C_{12} aralkyl or C_5 - C_{12} heteroaralkyl, each of 5 which is unsubstituted or substituted by one or more, where applicable identical or different, radicals R_7 ;

R_{15} is phenyl, C_4 - C_5 heteroaryl, C_7 - C_8 aralkyl or C_5 - C_7 heteroaralkyl, each of which is unsubstituted or substituted by one or more, where applicable identical or different, radicals R_{20} ;

10 R_{16} and R_{17} are each independently of the other $NR_{11}R_{12}$, CN, $CONH_2$, $CONHR_8$, $CONR_8R_9$ or $COOR_9$;

R_{18} is R_{15} , hydrogen, cyano, hydroxy, C_1 - C_{12} alkoxy, C_3 - C_{12} cycloalkoxy, C_1 - C_{12} alkylthio, C_3 - C_{12} cycloalkylthio, amino, NHR_{13} , $NR_{11}R_{12}$, halogen, nitro, formyl, $COO-R_{11}$, carboxy, carbamoyl, $CONH-R_{11}$, $CONR_{11}R_{12}$, or C_1 - C_8 alkyl, C_3 - C_8 cycloalkyl, 15 C_2 - C_8 alkenyl or C_3 - C_8 cycloalkenyl each unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy, C_1 - C_5 alkoxy or C_3 - C_6 cycloalkoxy radicals; or

20 R_8 and R_{18} together are C_2 - C_8 alkylene, C_3 - C_8 cycloalkylene, C_2 - C_8 alkenylene or C_3 - C_8 cycloalkenylene, each of which is unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy, C_1 - C_5 alkoxy or C_3 - C_6 cycloalkoxy radicals;

R_{19} is hydrogen, C_1 - C_4 alkyl or C_1 - C_3 alkylcarbonyl;

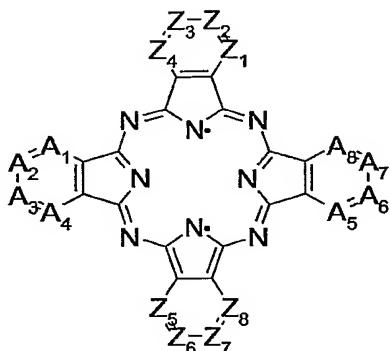
25 R_{20} is nitro, SO_2NHR_{11} , $SO_2NR_{11}R_{12}$, or C_1 - C_8 alkyl, C_3 - C_8 cycloalkyl, C_1 - C_8 alkylthio, C_3 - C_8 cycloalkylthio, C_1 - C_8 alkoxy or C_3 - C_8 cycloalkoxy each unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy, C_1 - C_5 alkoxy or C_3 - C_6 cycloalkoxy radicals; and

m is a number from 1 to 4.

2. An optical recording medium according to claim 1, wherein G₁ and G₂ are each independently of the other C(R₅);

5 M₁ is a lanthanide or transition metal of groups 4 to 7, especially Ti, Zr or Hf, more especially Zr;

(P) is a phthalocyanino diradical of formula



to A₈ and Z₁ to Z₈ are all independently of one another N or CR₂₄, and each R₂₄ independently of the other R₂₄ is H or R₇; or two adjacent R₂₄ together are 1,4-buta-

1,3-dienylene,

or

, each of which is unsubstituted or substituted

10 by one or more, where applicable identical or different, radicals R₇ and wherein 1 or 2 carbon(s) may have been replaced by nitrogen; and

Q₁ and Q₂ are O;

R₃ and R₄ are each independently of the other hydrogen, hydroxy, S-R₈, O-R₈, NH₂, NH-R₈, NR₈R₉; C₁-C₈alkyl, C₃-C₈cycloalkyl, C₂-C₈alkenyl or C₃-C₈cycloalkenyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₆; or C₆-C₁₀aryl or C₁-C₉heteroaryl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₇;

R₅ is hydrogen or forms a 5- or 6-membered ring with R₁ or R₂;

R₆ is halogen, hydroxy, O-R₁₁, O-CO-R₁₁, oxo, NH₂, NH-R₁₁, NR₁₁R₁₂, or C₁-C₄alkoxy unsubstituted or mono- or poly-substituted by halogen; and

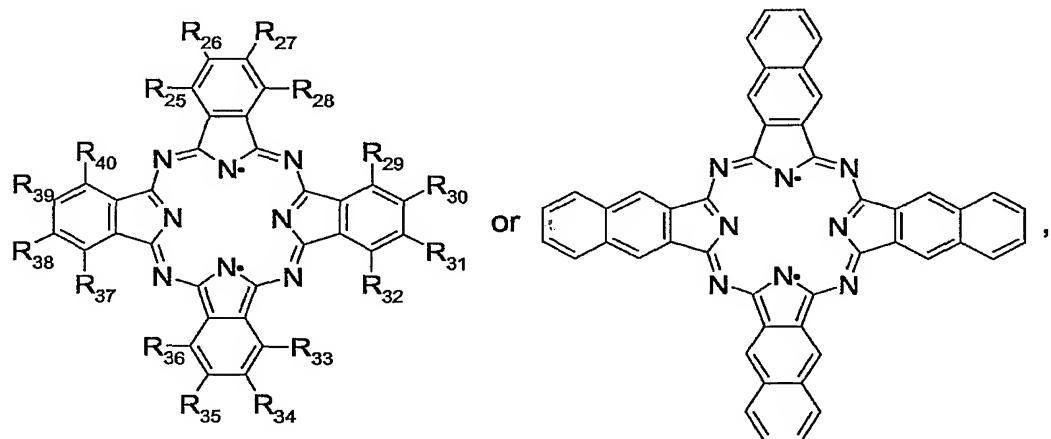
R₇ is halogen, nitro, cyano, thiocyanato, S-R₈, O-R₈, NH₂, NH-R₈, NR₈R₉, NHCOR₈, N=CR₈R₉, N=CR₁₆R₁₇, CHO, CHOR₈OR₁₀, COR₉, CONR₈R₉, SO₂R₈, COOR₈, or

5 C₁-C₅alkyl or C₁-C₅alkoxy each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₆.

3. An optical recording medium according to claim 1 or 2, wherein G₁ and G₂ are each independently of the other C(R₅);

M₁ is Ti, Zr or Hf, more especially Zr;

10 (P) is a phthalocyanino diradical of formula



wherein R₂₅ to R₄₀ are all independently of one another H, halogen, O-R₈, S-R₈, O-CO-R₈, NH-R₈, NR₈R₉, CH₂OR₁₁, CH₂NR₁₁R₁₂, C(R₁₈)=CR₁₆R₁₇, CHO, CHOR₈OR₁₀, C(R₁₈)=NR₈, COR₉, CR₉OR₈OR₁₀, CN, COOH, COOR₈, CONH₂,

15 CONHR₈, CONR₈R₉, SO₂R₈, SO₂NH₂, SO₂NHR₈, SO₂NR₈R₉, SO₃R₈, SiR₈R₉R₁₀, POR₈OR₁₀, P(=O)R₈R₁₀, P(=O)R₈OR₁₀, P(=O)OR₈OR₁₀, P(=O)(NH₂)₂, P(=O)(NHR₈)₂, P(=O)(NR₈R₉)₂, OPR₈R₁₀, OPR₈OR₁₀, OP(=O)R₈OR₁₀, OP(=O)OR₈OR₁₀ or OPO₃R₈, more especially H, halogen, O-R₈, O-CO-R₈, NH-R₈, NR₈R₉, CH₂OR₁₁ or CH₂NR₁₁R₁₂; and also

Q₁ and Q₂ are O;

R₁ and R₂ are each independently of the other C₁-C₅alkyl or C₂-C₅alkenyl, each of which is unsubstituted or substituted by one or more, where applicable identical or different, radicals R₆, or phenyl or C₂-C₅heteroaryl, each of which is unsubstituted or

5 substituted by one or more, where applicable identical or different, radicals R₇;

R₃ and R₄ are each independently of the other hydrogen, hydroxy, S-R₈, O-R₈, NH₂, NH-R₈, NR₈R₉, or C₁-C₅alkyl or C₂-C₅alkenyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₆, or phenyl unsubstituted or substituted by one or more, where applicable identical or different,

10 radicals R₇;

R₅ is hydrogen or forms a 5- or 6-membered ring with R₁ or R₂;

R₆ is halogen, hydroxy, O-R₁₁, oxo, NH₂, NH-R₁₁ or NR₁₁R₁₂; and

R₇ is halogen, nitro, cyano, O-R₈, NH-R₈, NR₈R₉, CHO, CHOR₈OR₁₀, COR₉,

CONR₈R₉, SO₂R₈, COOR₈, or C₁-C₅alkyl or C₁-C₅alkoxy each unsubstituted or

15 substituted by one or more, where applicable identical or different, radicals R₆.

4. An optical recording medium according to claim 1, 2 or 3, wherein the compound of formula (I) contains branched C₃-C₁₂alkyl or branched C₃-C₁₂alkenyl.

5. An optical recording medium according to claim 1, 2, 3 or 4, wherein the recording layer is substantially amorphous.

20 6. An optical recording medium according to claim 1, 2, 3, 4 or 5, additionally comprising a covering layer, wherein substrate, reflector layer, recording layer and covering layer are arranged in that order.

7. An optical recording medium according to claim 1, 2, 3, 4, 5 or 6, which in addition to comprising a compound of formula (I) comprises a metal-free chromophore.

8. An optical recording medium according to claim 1, 2, 3, 4, 5, 6 or 7, wherein the compound of formula (I) according to claim 1 is substantially amorphous.

9. A method of producing an optical recording medium according to claim 1, 2, 3, 4, 5, 6, 7 or 8, wherein a solution of a compound of formula (I) according to claim 1 is applied by spin-coating to a grooved substrate.

10. A method of recording or playing back data, wherein the data on an optical recording medium according to claim 1, 2, 3, 4, 5, 6, 7 or 8 are recorded or played back at a wavelength of from 350 to 500 nm.